REMARKS

Reconsideration of the present application is respectfully requested.

New claims 17-27 have replaced original claims 1-16.

Original claims 1-3 and 5-14 were rejected as obvious over a combination of Barbulescu (WO 98/24981) and Berrange (U.S. Patent No. 3,788,757). The compaction rollers described in Barbulescu are very different from the compaction roller described and claimed in the present application. For example, each of new claims 17 and 26 recites that each of the salient points 20 extends parallel to the central axis about which the roller rotates, and that the cross-section of each compacting face 22 is constant across its width (the width being measured parallel to the axis). In contrast, each salient point in Barbulescu (e.g., a point defined by the intersection of adjacent ones of the compacting faces 7) extends non-parallel to the axis. Moreover, none of the compacting faces 7 of Barbulescu has a constant cross-section across its width; rather the circumferential dimension of the compacting face progressively changes.

Yet another distinction between Barbulescu and the present invention as now claimed is the fact that the claimed compacting surface is "...arranged such that the instantaneous center of rotation of each compacting face...moves continuously about the full extent of the compacting face, whereby the roller applies a continuous kneading action to the soil surface as it rolls over that surface". Clearly the flat faces in the Barbulescu configurations do not have an instantaneous center of rotation which moves continuously about the compacting face. Because the Barbulescu compacting faces are flat there is no continuous progression of an instantaneous center of rotation about each compacting face. In addition, the Barbulescu rollers will apply an impact action to the soil surface rather than the claimed "kneading" action which is an important feature of the present invention and which is described at some length in the body of the specification.

As a general matter, the Barbulescu rollers may be likened to conventional impact rollers which apply periodic impacts to the soil surface as they roll over that surface. The present specification points out that the roller of the present invention does not act in the manner of an impact compaction roller. See, for instance, the first and second paragraphs on page 6 of the specification.

Berrange '757 describes an impact compaction roller where the impact energy can be varied. It will be clearly seen from, for instance, Figure 2 of Berrange '757 that as the roller 10 rolls over a soil surface, periodic impacts are delivered to the soil surface as the roller mass rises up on the salient ends 14.2 of the lobes 14 and then falls forwardly and downwardly onto the next, curved compacting face. This does not happen with the roller of the present invention where, as described in detail in the specification, there is a continuous kneading action applied to the soil surface rather than period impact blows. This kneading action comes about because there is a continuous progression of the instantaneous center of rotation around each compacting face as the roller rolls over the soil surface.

The invention as presently claimed also has a number of other features which distinguish it over the Berrange '757 roller. Firstly, if is noted that the claimed compacting surface is "...fixed non-adjustably to an outer periphery of the hub structure...whereas Berrange '757 requires that the lobes 14 defining the compacting faces be adjustable to vary the impact energy. Clearly, the fixed, non-adjustable nature of the compacting surface/faces in the present invention leads to a far simpler and more economical roller than is possible with the complicated Berrange '757 arrangements. Secondly, it is noted that the claimed convex compacting faces in the present invention extend "...continuously from one salient point to an adjacent salient point...". In its operative mode, as illustrated for instance in Figure 2, the Berrange '757 roller has a compacting face which does not extend from one salient point to the next. Succeeding each salient point there is a substantial re-entrant portion (i.e., the gap between the salient point 14.2 and the beginning of the next

compacting face 14.1), so there is no continuity of the compacting face between the salient points. Because the Berrange '757 roller acts as an impact roller, there is also no instantaneous center of rotation moving continuously about the full extent of each compacting face. With the configuration of, for instance, Figure 2 of Berrange '757, there is in fact no contact between the region 14.1 of a compacting face and the soil surface. Still further it is again pointed out that the roller of the present invention has a geometry which allows it to apply a continuous kneading to the soil surface rather than the impact action which will be delivered by the Berrange rollers.

It is submitted that there is no obvious combination of Barbulescu and Berrange '757 which would lead one to the invention as claimed in the revised claims.

The Official Action also referred to Cobb (U.S. Patent No. 4,237,984). It is pointed out that the Cobb device is not a soil compaction roller. Its function is merely to apply equispaced indentations to a soil surface to facilitate precise placement of seeds in a subsequent planting operation. This is achieved by angle-section "imprinting projections" 20. These are said to be reinforced by reinforcing rods 21 which are asserted in the Official Action to be equivalent to the stiffening ribs of the roller of the present invention. It is difficult, however, to see where any such equivalence resides. It seems that the rods 21 merely serve to attach the imprinting projections to one another, rather than performing a stiffening function as is the case with the ribs 30 of the roller of the present invention.

It is further noted that each of claims 23 and 25 recite first and second series of wear plates, with the wear plates 28 of the second series being shorter in the circumferential direction than the wear plates of the first series, and being disposed in respective spaces formed between successive wear plates of the first series. Original claim 7, which recited first and second series of wear plates, was rejected over the prior art, with the disclosure at col. 2, lines 49-57; col. 3, and col. 4, lines 1-16 of Berrange being mentioned. However, it is not seen that Berrange discloses long and short wear plates with the short wear plates disposed in

spaces formed between the wear long wear plates to define the salient points. In Cobb et al., salient points are defined by the projections 20, but there are no long and short wear plates and no spaces formed between the long wear plates to receive the shorter wear plates, as defined by claims 23 and 25.

Accordingly, it is submitted that claims 23 and 25 distinguish patentably over the applied prior art.

In light of the foregoing, it is believed that claims 17-27 are in condition for allowance.

Respectfully submitted,

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